The Oxford Handbook of Analytical Sociology

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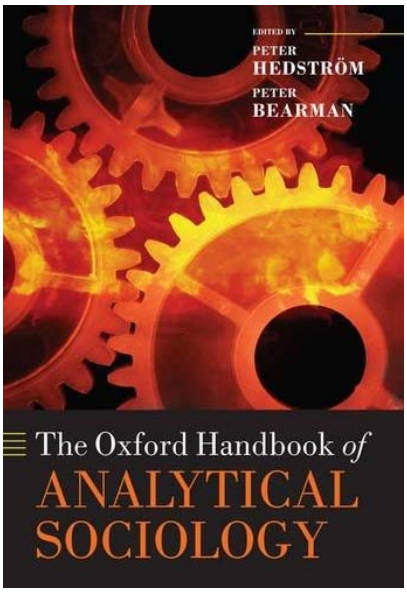

I begun to develop a particular interest in analytical sociology some years ago, since it sounded to me as a complement to the kind of social simulation carried out by sociologists. This monumental handbook edited by Peter Hedström and Peter Bearman confirms this. Definitively witnessing the progress and popularisation of this new school after the seminal contributions from Hedström and Swedberg (1998) and Hedström (2005), this book is proof that sociologically oriented social simulation and analytical sociology are already part of the same scientific endeavour. I expect that the success of this book will mean that this will be even more progress in the future.

The book consists of 30 chapters divided into four parts, the first on foundations, the second on micro-aspects, the third on social dynamics and the last on perspectives from other fields and approaches. The authors include Jon Elster, Karen S. Cook, Duncan J. Watts, Diego Gambetta and other influential sociologists, particularly from US universities.

The first part on foundations opens with an introductory essay by the editors which summarizes what analytical sociology is, looking particularly at the concept of mechanism explanations, 'structural individualism' and the micro-macro link. The second chapter by Peter Hedström and Lars Udehn is homage to the Mertonian origin of analytical sociology and focuses on the notion of middle-range theories as a means to combine theory and empirical evidence.

It is no accident that the editors place agent-based simulation at the core of their analytical sociology research agenda. On page 11, they write: "Until very recently we did not have the analytical tools needed for analyzing the dynamics of complex systems that large groups of interacting individuals represent. Powerful computers and simulation software have changed the picture - so much so that it is possible to have some confidence that agent-based computer simulations will transform important parts of sociological theory because they allow for rigorous theoretical analyses of large and complex social systems." This recognition is further confirmed by the fact that, when the editors introduce the argument of the relevance of micro aspects for social outcomes, the most cited reference is Epstein's idea of generative explanation (Epstein 2006). All the

concepts they use are the same as those used in social simulation.

The second part consists of eight chapters which are the social cogs and wheels of analytical sociology. Some of them are focused on individual aspects, such as emotions, beliefs, preferences, opportunities, and heuristics. Others are concerned with relational aspects, such as signalling, norms and trust. Taken together, they are a comprehensive analysis of the micro-foundations of sociological models. I particularly enjoyed the first three chapters, by Jon Elster on emotions, Jens Rydgren on beliefs and Jeremy Freese on preferences. Although written by different authors, with the associated danger of incoherence and redundancy, they complement each other and share basically the same theoretical framework. The chapter on heuristics by Daniel G. Goldstein is of paramount importance for social simulation, since it shows the potential of combining lab experiments and social simulation to investigate sociological aspects of individual action at their best. The chapter on signalling by Gambetta is a brilliant example of sociological analysis with empirical contents. Elster provides a subtle framework to distinguish between social and moral norms, suggesting a non-instrumental view on social norms with a lot of followers also in social simulation. Finally, Karen S. Cook and Alexandra Gerbasi develop an excursus on different social mechanisms than can produce cooperation and social order other than trust.

The third part deals with social dynamics that are the bread and butter of social simulation. Some chapters emphasize agent-based modelling and social networks.

Michael Macy and Andreas Flache, two notable social simulation exponents, provide a complete chapter on agent-based models of social interaction. They emphasize the peculiarity of agent-based modelling in respect to game theory, equation-based models and statistical linear models. In doing so, they also illustrate some of the limitations of agent-based modelling, i.e., its scarce transparency as a causal mechanism engine and take a strong position in favour of the KISS principle and against the kitchen sink temptation. This recalls Coleman's position that a sociologist's mission is to tackle complex social patterns not complex cognitive aspects. Pragmatic reasoning leads sociologists to think that it is reasonable not to be too complex in behavioural assumptions of their models, so as to concentrate on concrete sociological aspects. This sounds absolutely reasonable if one keeps the range of sociological interest within a 'pure' analytical level, as in this book and as many sociologists do. However, if one thinks that social sciences should also deal with policy issues so as to help policy makers understand and solve contingent empirical problems, as this policy mission is important for the social prestige of the discipline, this position must be questioned. In most cases, scientists making policy models or applied science are requested to get their hands dirty with details, empirical richness, and micro aspects. The consequence is that models become significantly more complex than analytical abstractions. Of course, this does not mean that we should throw in the kitchen sink, but that a more vivid representation of empirical reality at an agent or social structure level is needed for policy models.

The other chapters of this third part are full of examples of social mechanisms. Elizabeth Bruch and Robert Mare provide a comprehensive account on segregation dynamics, Michael Biggs a systematic analysis of self-fulfilling prophecies, Yvonne Åberg certain interesting empirical findings on the contagious nature of divorce, Meredith Rolfe focuses on conditional choice, James Moody on network dynamics, Duncan J. Watts and Peter Dodds on social influence, Christopher Winship on time and scheduling, Scott Feld and Bernard Grofman on homophily, Joel Podolny and Freda Lynn on status, Ivan Chase and W. Brent Lindquist on dominance hierarchies and Stathis Kalyvas on conflict.

I particularly enjoyed the chapters by Matthew J. Salganik and Duncan J. Watts on social influence in cultural markets, by Delia Baldassarri on collective action, and by Katherine

Stovel and Christine Fountain on matching. Salganik and Watts provide a brilliant example of how to use the web to conduct mixed experiments with real agents in virtual social settings. This sounds to me as an example of a creative non-standard lab experiment which sociologists will have more to do with in the future. The authors provide a simple and effective explanation of the emergence of a broad range of successful cultural products, such as bestselling books, hit songs, blockbuster movies and all the next 'big thing' that are impossible to predict, by experimentally studying social influence mechanisms and self-fulfilling prophecies. Katherine Stovel and Christine Fountain focus on matching in competitive conditions, by introducing an agent-based model that illustrates the relevance of social networks for the emergence of labour-market segregation. Delia Baldassarri points out certain limitations of standard models of collective action that are also interesting for social simulation, such as the underestimation of the relevance of organized groups, of the heterogeneity of their size and composition and of the agent consciousness about the jointed collective nature of public goods. In particular, the discussion on this last aspect will positively inspire socio-cognitive scientists doing social simulation.

The last part introduces other perspectives related in one way or another with analytical sociology. Richard Breen introduces game theory in 15 pages to make it more digestible to sociologists, in particular by disentangling it from rational choice assumptions. Hannah Brückner presents surveys as suitable tools to gather data on social interaction to support mechanism-based explanations. She suggests interesting ways to anchor surveys appropriately to social contexts, both in time and space, e.g., by incorporating data at multiple levels of social organisation, such as social networks, families, corporations and so on. Diane Vaughan tries to link analytical sociology and ethnography, although these seem to be condemned to remain very distant perspectives. Karen Barkey provides an analysis of the state-of-the-art of historical sociology in an analytical sociology perspective to show how the former could benefit from the latter. Iris Bohnet does an excellent job in introducing the experimental approach to the study of important social phenomena to sociologists, such as cooperation, reciprocity, reputation and social norms in general. The typical criticisms of sociologists about experiments, in particular the fact that experimental settings are highly abstract, artificial and unrealistic, players are not embedded in dense social relations as frequently happens in the real world and so on (e.g., see Boero et al. 2009, 2.7), are not fully addressed.

In conclusion, following a 'political afflatus', at the end of the introductory essay, the editors point out that, while analytical sociology at present is nothing more than social networks and agent-based computational models, this should change in the future. They expect more contributions from quantitative & qualitative sociology, historical sociology, game theory and experimental economics. Although desirable, there are serious doubts that this will happen effortlessly, for various reasons.

Firstly, the so-called behavioural experimental sciences, which are tightly combining game theory and lab experiments, are following their own incremental steps toward theoretical generalisations that are far from analytical sociology inspiration. On one hand, more interest by sociologists in these new branches of experimental sciences is to be absolutely welcomed. In particular, in my view, there is not a so deterministic reason why attention to social mechanisms should exclude any idea of generalisation, in particular about general evolutionary aspects of social life. On this, it seems that analytical sociology is too self-referential, when other disciplines, such as evolutionary biology and the neurosciences, are explaining important features of individual action and social life. It is hard to say that, in a 30 book chapters, the only exception is the chapter on dominance hierarchies by Ivan Chase and W. Brent Lindquist, where sound references to biology and evolutionary sciences are introduced. On the other hand, the time has come that sociologists should be more experimental and put more trust on exploring non-standard

(game theory) sociologically informed (field or lab) experiments. Certain innovative departures from game-theory experimental settings that maintain the methodological and substantive advantage of the lab but relax the strong theoretical assumptions of experimental game theory, would be worth the time and effort of some creative analytical sociologist in the future. The chapters on heuristics by Daniel G. Goldstein, on social influence by Salganik and Watts and on experiments by Iris Bohnet can provide a crucial source of inspirations for this purpose.

Secondly, I think it is not a coincidence that most analytical sociologists come from social network and agent-based modelling. To me, it seems that the analytical sociology agenda requires a research style that puts greater emphasis on formal modelling and advanced computational techniques. We must admit that at present this is not shared by all sociologists that the editors hope to convert in the future.

In conclusion, the 30 chapters that touch upon diverse topics, 772 pages, a useful name and subject index make this book an irreplaceable reference for the 21st century sociologists. Although some may be sceptic on the idea of introducing the umpteenth new label in the social science market, the 'analytical' label is a good means for all sociologists who share the principles depicted in this book to distance themselves from the dominant ways of doing sociological research. I believe that the 'political' action of this new sociological school sounds like a fight against Gresham's law, the victory of which would be decisive for the future existence of sociology as a science. Therefore, let us hope that this handbook will be extremely successful and just the beginning.

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